

## ratio test

$$\text{If } \lim_{n \rightarrow \infty} \left| \frac{a_n}{a_{n+1}} \right| = l$$

① if  $l > 1$ , then series converges absolutely

② if  $l < 1$ , then series is divergent

Q1

$$\lim_{n \rightarrow \infty} \frac{u_n}{u_{n+1}} = 0 < 1$$

$\Rightarrow$  series is divergent option (b)

Q2

Given  $\sum u_n$  is divergent

$$\text{if } \lim_{n \rightarrow \infty} \frac{u_n}{u_{n+1}} < 1$$

option (a)